

A NEW GENUS AND SPECIES OF BOPYRID ISOPOD
INFESTING THE CRANGONID SHRIMP *PONTOPHILUS*
ABYSSI SMITH IN DEEP WATER OF THE
NORTHWESTERN ATLANTIC OCEAN

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Abstract.—*Pontobopyrus abyssorum*, a new genus and species of pseudionine bopyrid isopod branchially infesting the crangonid shrimp *Pontophilus abyssus* Smith from a depth of 3850 m off the coast of Virginia, is described. This depth is evidently the greatest known for the occurrence of any species of bopyrid. The new species is markedly different from all others known to infest caridean shrimps.

A single female bopyrid isopod from the branchial chamber of the crangonid shrimp *Pontophilus abyssus* S. I. Smith has become available. It clearly represents a hitherto undescribed genus and species of the bopyrid subfamily Pseudioninae. Regrettably no male was obtained, but because it was unlikely that one would be found, it seemed appropriate to prepare the description without it.

Pontobopyrus, new genus

Diagnosis.—Female: Body axis describing nearly circular arc; all body segments set apart. Head deeply set into pereon and completely bordered anteriorly by large frontal lamina; maxilliped with articulating palp; posteroventral border of head bearing 2 pairs of lateral projections. Oostegites completely enclosing brood pouch. Six pleomeres deeply separated laterally, first 5 produced into elongate lateral plates and bearing small uniramous pleopods; final pleomere extended into long uniramous uropods. Male unknown.

Etymology and gender.—Prefix “ponto-” from Greek word meaning “open sea” in reference to occurrence in deep ocean and in reflection of host’s generic name *Pontophilus*, combined with *Bopyrus*, name of type-genus of family Bopyridae. Gender masculine.

Type-species.—*Pontobopyrus abyssorum*, new species.

Pontobopyrus abyssorum, new species

Fig. 1

Material examined.—Infesting *Pontophilus abyssus* S. I. Smith. Cruise



Fig. 1. *Pontobopyrus abyssorum*, holotype female: a, Dorsal view; b, Ventral view; c, Right antenna 1; d, Right antenna 2; e, Right maxilliped; f, Palp of right maxilliped; g, Spur of right maxilliped; h, Right posteroventral border of head; i, Left oostegite 1; external; j, Same, internal; k, Right pereopod 1; l, Right pereopod 7. Scale line: 4.0 mm for a, b, i, j; 2.0 mm for e, h; 1.8 mm for k, l; 0.7 mm for c, d, f, g.

EPA-78-01 of R/V *Advance* II, Station 9: Northwestern Atlantic Ocean, 38°04'14"N to 38°09'15"N, 70°26'22"W to 70°22'10"W, charted depth 3,850 m, 24 June 1978, 3-hour tow with 45-foot semi-balloon otter trawl, J. A. Musick and K. Sulak, colls., E. L. Wenner, det. of host. 1 ♀, holotype, USNM 172350.

Description of holotype female (Fig. 1).—Length (exclusive of uropods) 9.76 mm, maximal width 5.40 mm, head length (exclusive of frontal lamina) 1.01 mm, pleon length (exclusive of uropods) 3.23 mm. Body axis evenly and continuously distorted along nearly circular arc through about 77°. All body regions and segments distinct (Fig. 1a, b).

Head subelliptical, much broader than long, deeply set into pereon. Large fleshy frontal lamina reflexed over whole anterior margin. No eyes. First antenna (Fig. 1c) of 3 articles rapidly decreasing in size distally; second antenna (Fig. 1d) of 4 articles also much smaller distally; distal articles of both possibly setose, but not discernibly so. Maxilliped (Fig. 1e) quite long, with irregular border; prominent acutely pointed setose palp arising from

anterior margin about $\frac{1}{3}$ of distance from anteromedial corner, distinctly articulating with maxilliped; anteromedial corner of posterior maxillipedal segment produced into well-developed setose spur (Fig. 1g). Posteroventral border of head (Fig. 1h) with 2 rather widely spaced clavate lateral projections on each side, nearly entire margin in middle.

Pereomeres deeply separated, especially on long side. Coxal plates on both sides of pereomeres 1–4; tergal projections on both sides of all pereomeres, though indistinctly set off posteriorly. Oostegites arching high and completely enclosing brood pouch; first oostegite (Fig. 1i, j) rather small, relatively narrow, produced into broad blunt posterolateral point, its internal ridge unadorned; other oostegites large, each about twice as wide as long. Pereopods (Fig. 1k, l) all of about same size, but basal articles of anterior ones much larger; some meri and carpi fused.

Pleon extended, of 6 pleomeres all deeply divided laterally. Pleomeres 1–5 developed into sharply tapered lanceolate lateral plates on both sides, those on longer side considerably larger. Five pairs of short posteriorly directed uniramous lanceolate pleopods along sides but not at all concealing middle of pleon. Final pleomere produced into long slender tapering uniramous uropods, their length exceeding half of rest of length of pleon.

Male unknown.

Etymology.—Specific name *abyssorum*, “of the deeps,” genitive plural of host’s specific name and indicator of depth of collection of species.

Discussion.—Although clearly assignable to the subfamily Pseudioninae (Codreanu, 1967), the female of *Pontobopyrus abyssorum* is quite different from that of any genus heretofore described in that subfamily. The enclosure of the head is highly unusual, more reminiscent of the condition in the Orbioninae. The shapes of the tergal projections, oostegites and lateral plates and the body curvature are also distinctive. Finally, the combination of an articulating maxilliped palp, uniramous pleopods and elongate uniramous uropods immediately distinguishes it from other pseudionine genera.

The subfamily Pseudioninae contains many species, mostly parasites of anomurans, but a few species of *Pseudione* are known to infest carideans, especially crangonids (including 2 species of *Pontophilus*), pandalids and nephropids. (See Bourdon, 1968, 1971, for partial listing.) A thorough revision of the ill-defined genus *Pseudione* will probably result in the reassignment of some of the caridean-infesting species to new genera, but no other species of pseudionine recorded as the parasite of a caridean is so obviously not a member of *Pseudione* as *Pontobopyrus abyssorum*. Other branchial bopyrid parasites of carideans include the whole of the large subfamily Bopyrinae (Codreanu, 1967) and most of the small subfamily Argeiinae (Markham, 1977).

Evidently the deepest a bopyrid has been recorded is a depth of 800 to 900 fathoms (=1,460–1,650 m) for the appropriately named species *Bathy-*

gyge grandis Hansen, infesting *Glyphocrangon sculptus* (Smith) off South Africa (Stebbing, 1908). That is less than half the record for *Pontobopyrus abyssorum*, at 3,850 m.

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